


1999

## Awards and Recognition, Iowa Academy of Science, 1999

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## AWARDS AND RECOGNITION IOWA ACADEMY OF SCIENCE 1999

### DISTINGUISHED IOWA SCIENCE TEACHING AWARD

**Somnath Sarkar**

Dr. Somnath, Assistant Professor of Chemistry at Graceland College, received his Bachelor of Science degree (Chemistry Honors) from Calcutta University in 1983 and a Master of Science in Chemistry at the Indian Institute of Technology, Kanpur, India, in 1986. He joined the graduate school at Louisiana State University, Baton Rouge, Louisiana, and then transferred to the University of Wisconsin-Madison in 1987, where he received his Ph.D.

His graduate research involved multiple-bonded silicon compounds, reactive intermediates in the area of silicon chemistry, and in chemical education. In the last two years of graduate school, which he calls the most productive and fulfilling years, he had the opportunity to work with Professor Bassam Z. Shakhshiri, an internationally known master demonstrator and a highly reputed teacher.

He has actively participated in different capacities in several curricular reform projects such as the New Tradition Project at the University of Wisconsin-Madison, and the Iowa general Chemistry Network Project at Iowa State University. He has presented a number of talks in chemical education about the effective use of demonstrations. He has worked extensively with public school teachers, led workshops, and visited several classrooms to promote engaging science curricula for the public school system.

Dr. Sarkar received the Graceland College Excellence in Teaching Award for 1998. The citation states that he is "one of the colleges most outstanding academic leaders." He serves on the advisory board of the Chemical Education Advisory Committee at the University of Missouri-Columbia and is a reviewer of the *Journal of Chemical Education*. He lives in Kellerton, Iowa, with his wife, Nancy, and daughter, Tia.

### DISTINGUISHED IOWA SCIENTIST AWARD

**Steve Feller**

Steve Feller came to Coe College in 1979 after completing his doctorate in physics at Brown University. Since that time he has worked with over 80 students in undergraduate research. With his students and colleague, Professor Mario Affatigato, he has developed and internationally known program in glass science. The research focuses on the relationship between atomic structure and physical property. In several instances this group has had the good fortune to uncover new glass forming systems. Over forty papers in referred journals with student co-authorship and more than fifty talks by students at national and international meetings have resulted from this work. The students from this research group have continued on at some of the most prestigious graduate schools in the country including Stanford, Brown, MIT, Vanderbilt, Northwestern, Illinois, Michigan, Wisconsin—among over thirty graduate programs to date. The group has benefited from close collaborations with researchers in England, Germany, Greece, Italy, Rhode Island, Tennessee, Indiana, Iowa, and New Mexico.

Professor Feller has been honored in a number of ways including being named Iowa Professor of the Year (1995) by the Carnegie Foundation for the Advancement of Teaching, and being given the

American Physical Society Prize to a Faculty Member for Research in an Undergraduate Institution (1993). He was especially pleased to have been named the 1993 Teacher of the Year (Lynch Award) by the graduating class of Coe College. In 1996 Dr. Feller served as a Fulbright Scholar to the United Kingdom where he studied glasses using neutron scattering.

### DISTINGUISHED SERVICE AWARD

**Daryl Smith**

Dr. Daryl D. Smith came to the University of Northern Iowa in 1967 after completing his doctorate at The University of Iowa. He has numerous grants funded in both science education and in prairie studies, where most of his work has been focused since 1976. Presently, he is developing a film to be titled "Iowa's Lost Landscape" and has recently received funding to develop a Native Vegetation Center.

A member of the Iowa Academy of Science since 1965 and Fellow since 1974, he has provided valuable service to the Academy in all categories—section chair, member and chair of committees, ISF grant reviewer, board member, and President. Dr. Smith has served on the Parish Farm Committee, chair of the Student Program and Conservation Section. He was elected to the IAS Board of Directors and later as President-Elect, serving as President in 1994-1995. At a critical point in the Academy's history, he agreed to serve as Interim Executive Director from September through December 1998.

He served on the Board of Directors of the Iowa Chapter of the Nature Conservancy from 1976-1982, the Iowa Preserves Advisory Board from 1979-1985 (chair, 1984-1985) and Advisor from 1986 to the present, and the Board of Directors at the Iowa Lakeside Laboratory from 1984-1994. He is presently on the Advisory Committee for the laboratory.

Dr. Smith's service to Iowa prairie studies and to the Iowa Academy of Science is well documented and noted by professionals and other interested citizens in Iowa and the Midwest. He is a sought after speaker for professional and citizen groups and has received honors from the Cedar Valley Sierra Club, the Iowa Sierra Club, the Iowa Chapter of the Nature Conservancy, the Iowa Wildlife Federation, and the Association for Integrated Roadside Management.

### EXCELLENCE IN SCIENCE TEACHING AWARD MULTIPLE/GENERAL CATEGORY

**Kevin B. McGinity**

Dane Philipsen, a student of Kevin's at Ottumwa High School, describes him as "optimistic, congenial, and just a little bit crazy—the right blend to make even the most monotonous of days seem a little bit better." He is a man who makes a supreme effort to help students enjoy and understand science. Kevin is a life-long learner and a positive role model for his students. A colleague, Gail Wortmann, admires his tenacity in trying to reach every student in his class. Teaching strategies range from concept maps to presentations and team work. Concepts are spiraled during the year for better long term learning and expectations for the many activities are clearly defined with rubrics. A thematic approach is used in conjunction with cooperative learning. For example, student teams are challenged to

propose a model 50-person, self-sustaining colony that rides the ocean currents during the Waterworld unit. The students conduct research into ocean currents, weather patterns, fish distribution, and water characteristics. Students produce a model, a map, and a presentation to a panel of peers. This approach puts the responsibility for learning on the student and keeps their interest high.

Kevin is active in professional development as a member of the Teaching for Learning Academy, the Institute for Chemistry at Creighton University, and the Scope, Sequence, and Coordination Project with the University of Iowa. He has been an integral part of the science team in Ottumwa which is revising the science curriculum based on the National Science Standards.

Kevin has served as president of the Ottumwa Education Association and is presently on the negotiating team. In spite of his busy schedule, he still finds time to sponsor the local Science Club. You know that he is making an impact on students, however, when one writes that "he is a man talented in sharing not only his jokes that make you groan, but his love and knowledge of science as well."

### EXCELLENCE IN SCIENCE TEACHING AWARD EARTH SCIENCE CATEGORY

**Barbara J. Kinneer**

Barbara personally practices what she teaches at James Madison Middle School in Burlington. Her activities and classroom strategies demonstrate a person who is dedicated to making a positive contribution to environmental action. She has been a member of the Des Moines County Conservation Board for 10 years, was past president and is the current secretary of the Three Rivers Environmental Council, and has spent summers working in the Neil Smith Wildlife Refuge in Iowa and the Selway Bitterroot National Forest in Idaho. Her students have developed a nature trail and outdoor classroom near their school and repaired a stone cabin to be used as a natural history museum on Earth Day. She coordinates the school's annual science fair and all-grade outdoor education programs. Barb is an interactive teacher, providing many hands-on classroom lessons and projects. She uses concept maps at the beginning and end of every unit to find out how students have progressed in their understanding and vocabulary of the concepts. She frequently uses art with assessment, such as student-produced flash cards which are donated to the elementary schools. Her Rock and Mineral Unit is a three-ring circus of activities culminating with a field trip to the local park and cemetery where rocks are identified.

Barb has won the Des Moines County Conservation Board's Volunteer of the Year Award and the Iowa Association of Naturalists/Iowa Conservation Education Council's Bohumil Shimek Environmental Educator Award. She has helped plan and present many teacher workshops that focus on water quality, developing an outdoor classroom, planning and leading outdoor field trips, and the frogs and toads of Iowa. Barb states that her purpose for teaching workshops is to create awareness of the land ethic of Aldo Leopold. One imagines that he would be proud his legacy has encouraged the wealth of activities and service that Barb has provided to the people in her area.

### EXCELLENCE IN SCIENCE TEACHING AWARD MIDDLE/ JUNIOR HIGH CATEGORY

**Peggy Barbour**

At Ames Middle School, Peggy strongly believes that involving students in science outside of the school day enhances the science learned in the classroom. Her students have had many problem solv-

ing experiences through Super Science Saturdays and special science nights. She is the founder of the Science Olympiad in the state of Iowa and has coached the Ames Middle School teams to participation in 6 consecutive National competitions. Her classroom also reflects her philosophy of active involvement. She employs cooperative learning, peer coaching, student-designed experiments and questioning. In a unit on force, motion and energy, students were challenged to formulate questions about the Bugsopter, a rabbit-shaped paper helicopter. After developing an experiment to test a hypothesis, the students completed peer evaluations of the design. They conducted many experiments, some in cooperation with the industrial technology teacher. Finally, a trip to the amusement park allowed data collection to prepare for an online project in which the students submitted ride designs for evaluation by a group of engineers.

Peggy serves as chairperson of the Ames School District Science Cabinet and her leadership has been instrumental in the revision of the science curriculum to better align with the National Science Standards. She has been honored as a State finalist in the Presidential Award for Excellence in Science Teaching two years, and has received grants from Toyota and U.S. West. to integrate technology into Ames classrooms. Her students will attest to Peggy's skill and imagination that make science a full learning experience. Mary Kolner, a former student, stated that "Mrs. Barbour has a wonderful sense of humor. Instead of lecturing, she showed us a magic trick which used acids and bases with color-changing solutions featuring Red Eye, sarsaparilla, two bad guys, and a city slicker. Her clear teaching method with her unique sense of humor make science class a full learning experience."

### EXCELLENCE IN SCIENCE TEACHING AWARD ELEMENTARY CATEGORY

**Jane Haugen**

Steve Geisert, a Dubuque School science coordinator, says that "Jane is a teacher of teachers. She has great ideas and is willing to share her talents and resources with other teachers, at Kennedy Elementary School where she teaches, in her district, in her state, and nationally." Locally, Jane has set up science nights, was instrumental in the development of a nature center at her school, and initiated the GLOBE program at Kennedy, involving first and fifth graders working cooperatively daily to report weather to NASA on the Internet. Jane has worked at the state level as editor of Sparks, the Elementary Science Teachers Newsletter, and was recently Elementary Science Teaching Section chair. She feels that laying a strong foundation in science during the early years is crucial and it is her goal to make science interesting and fun. Her students teach other classes what they have learned through posters and presentations. Jane is committed to help increase environmental awareness in her students through special classroom projects. The school nature center is an area with walkways, borders, and garden areas and was developed with the help of the Izaak Walton League, Pheasants Forever, and Ducks Unlimited. Each grade level now has plots to complete planting projects.

Jane has worked to increase the access to technology for her students and has received grants from Eisenhower Mini-grant program, the Videomicroscope Project and the US West Technology program. She has been selected as an environmental award winner from the Izaak Walton League and will be providing training to other teachers around the state in the GLOBE program. Parents and students recognize Jane's commitment to science education. One parent wrote that her classroom is a great learning environment and science is one of her strengths. "Our son enjoyed the daily gathering of weather

information and sending it to NASA with the 5th grade students—what an opportunity!”

### **EXCELLENCE IN SCIENCE TEACHING AWARD LIFE SCIENCE CATEGORY**

**Beverly A. Iverson**

Gerald Heying states that Beverly, who teaches at Marshalltown High School, has had a major impact in the students and teachers of the Marshalltown district. She has spent countless hours working on committees and task forces to improve educational opportunities for students. Her work has included the Outcomes Based Education Strategy Team, Science Benchmarks and Standards, the Crisis Response Team and Career Pathways. She has received over \$12,000 for technology improvements in biology including computers, probes, digital camera, GPS, and printers. Beverly has also been active at the state level serving as Regional Director, on the Fall Conference Committee, and presently as Treasurer of the Iowa Science Teachers Section of the Academy of Science. She has been recognized for her successful coaching of student independent research by the Hawkeye Science Fair and the Iowa Academy of Science. Her facilitation has resulted in many students qualifying for the National Science and Humanities Symposium, the International Science and Engineering Fair and the American Academy of Science. She sets high standards for herself and for her students and has just completed the portfolio portion of the National Board for Professional Teaching Standards Certification.

In the classroom, Beverly works to establish a positive learning climate which includes living animals such as an iguana, box turtles, salamanders and rats along with plants and a cactus corner. Student work is displayed in the halls and reference materials are readily available. Science concepts are explored with concrete experiences using as many of a student's senses as possible. She encourages creativity through assignments which require cartooning, story writing, model building and visuals. Assessments are varied as well with portfolios for each student containing selected quality samples of their work. Beverly has created an atmosphere of cooperation in her science department as chair and has demonstrated a commitment to the quality of science education that all students need.

### **EXCELLENCE IN SCIENCE TEACHING AWARD ELEMENTARY CATEGORY**

**Carolyn R. White**

You would have a hard time finding Carolyn and her class from Penn Elementary School in Iowa City during the Habitats unit. They might be making observations of the school nature area investigating animals and their living preferences. They might be at the McBride Wildlife Field Campus exploring a spillway, pond, prairie, bird blind, or woodland area. You might find them in the classroom investigating a question that intrigued them and preparing a presentation to share what they found with others. In each activity you would notice that cooperative groups and collaboration are critical components of her class. She works to involve parents in the learning process with the Parent Book Bag project. Each science unit has a bag which contains a selected piece of children's literature, an interview which the parent conducts with the student, and a hands-on

activity which will demonstrate what the child is thinking. The information is relayed back to Carolyn who designs the subsequent lessons to challenge their misconceptions through activities causing the students to rethink and modify their ideas. Carolyn has been a part of many projects which has impacted her teaching styles. The DAP (Developmentally Appropriate Practices), STS (Science, Technology and Society), PALS (Parents, Activities, and Literature) programs increased her science background and provided methods to incorporate inquiry in her teaching. She has become a demonstration teacher for the research-based SSCS project and has facilitated PALS inservices for several weeks each summer.

Jeanne Bancroft, the Iowa City Science Coordinator, states that Carolyn has been instrumental in the ongoing and challenging process of studying the curriculum, examining national reform movements and determining what actions needed to be taken to develop a premiere elementary science program in Iowa City. On the building level, she and her students created natural history guides of the trees, bushes, and flowers around Penn School with trail guides and markers. Her work to create these curriculum materials has resulted in many students at her school having first hand experiences at this onsite outdoor classroom. Carolyn provides the kind of rich variety of activities that will make any child love science.

### **EXCELLENCE IN SCIENCE TEACHING AWARD PHYSICAL SCIENCE CATEGORY**

**Karen Couch Breitbach**

Jody Stone at the Malcolm Price Laboratory School of Cedar Falls says that it is not unusual to see Karen's students out in the hallway taking measurements of rolling tubes of paper towels, bike tires, dart guns, rockets, and match box cars. Her students push cars across the parking lot, drop objects in the stairwell, and coast down the hall on skateboards. Data collection probes interfacing with computer and graphing calculators are standard equipment. Multiple approaches including the hands-on activities and paper/pencil problem solving are part of Karen's philosophy of teaching. She believes in revisiting concepts and skills and structures activities so that students discover patterns or relationships for themselves. She enjoys science and it shows in her classroom. Karen has worked to break down barriers between disciplines. She and the math teacher developed a fully integrated physics and advanced math course. Other integration projects have included the Young Scholars Program and two Eisenhower grants to help other teachers learn about integrating mathematics and science. Karen believes that assessment should mirror instruction and includes many evaluations during the learning process for students to demonstrate their mastery of skills and concepts.

Karen has been very active in professional development activities for science and math teachers. She has presented many times at the Iowa Fall Science Teachers Conference, the National Science Teachers Conference, the Iowa and National Council of Teachers of Mathematics, and has mentored many teachers in her career. Karen demonstrates a sharing philosophy with teachers and with her students. Lyn Countryman, a colleague, states that her students know she cares about them with well-planned and engaging activities and extends her contacts with them outside of the classroom by attending functions and fundraising activities for athletics. To quote Lyn, "If students need an adult to connect with, it's often Ms. Couch. This sense of caring is conveyed to students such that they know Ms. Couch shares a stake in their learning."